



# 2006 Minerals Yearbook

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QATAR

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# THE MINERAL INDUSTRY OF QATAR

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The mineral output of Qatar was dominated by hydrocarbons. In 2006, the natural gas and crude petroleum sector accounted for about 81% of total merchandise exports, about 67% of Government revenue, and about 62% of the gross domestic product (GDP). The manufacturing sector, which included the production of cement, fertilizers, and steel, and the refining of petroleum, accounted for an additional 7% of the GDP (Qatar Central Bank, 2007, p. 48, 54, 62).

In October, Qatar Petroleum announced that the moratorium on additional development of the gas reservoirs of the North Field between 2005 and 2007 would be extended to 2010. Domestic use of natural gas would have priority over natural gas export projects when the moratorium was lifted (Middle East Economic Digest, 2006a).

## Production

In 2006, the large increase in the production of helium was attributed to the Ras Laffan Helium Plant ramping up to full production. Crude helium was extracted at the country's seven liquefied natural gas (LNG) trains and subsequently purified and liquefied. Besides hydrocarbons, other notable minerals and mineral-based commodities produced in Qatar included cement, crude steel, direct-reduced iron (DRI), and nitrogenous fertilizer (ammonia and urea).

## Structure of the Mineral Industry

The Government held direct or indirect interest in much of the country's mineral industry. Qatar Petroleum was a 100% state-owned company. Qatar Petroleum held majority interest in Industries Qatar Q.S.C., Qatar Liquefied Gas Co. Ltd. (Qatargas), Ras Laffan Liquefied Natural Gas Co. Ltd. (I) (RasGas I), and Ras Laffan Liquefied Natural Gas Co. Ltd. (II) (RasGas II). Industries Qatar held majority interest in Qatar Fertilizer Co. S.A.Q., Qatar Fuel Additives Co. Ltd. Q.S.C., and Qatar Steel Co. Q.S.C. (QASCO).

## Commodity Review

### Metals

**Iron and Steel.**—In 2006, QASCO continued its expansion program. Projects expected to be commissioned in 2007 included a hot-discharge combination DRI and hot-briquetted iron plant, an additional electric-arc furnace and continuous-casting facility, and a 700,000-metric-ton-per-year-capacity reinforcing-bar rolling mill (Qatar Steel Co. Q.S.C., 2007, p. 26-27).

### Mineral Fuels

**Natural Gas.**—Numerous projects were planned for Qatar, but construction costs continued to spiral upward in 2006. The estimated cost of the 140,000-barrel-per-day (bbl/d)-capacity Pearl natural gas-to-liquid (GTL) plant rose to \$16 billion in early 2007 from \$12 billion in mid-2006, and about \$5 billion in 2004. Other GTL projects in Qatar included the 34,000-bbl/d-capacity Oryx GTL plant, which was expected to come onstream in early 2007; the proposed 65,000-bbl/d capacity expansion of the Oryx plant; and the proposed 154,000-bbl/d-capacity Barzan GTL plant (Dutta, 2006; Middle East Economic Digest, 2006b; Hindley, 2007).

Ras Gas II initiated production from the 4.7-million-metric-ton-per-year (Mt/yr)-capacity LNG train 5 in November 2006. Ras Laffan Liquefied Natural Gas Co. Ltd. (III) expected that initial production from the 7.8-Mt/yr-capacity LNG train 6 would start in 2008, and completion of the construction of the 7.8-Mt/yr-capacity LNG train 7 was expected in 2009. Qatargas had four additional LNG trains under construction. Production from the 15.8-Mt/yr-capacity two LNG train Qatargas 2 plant was expected to begin in 2008. Construction of the 7.8-Mt/yr-capacity LNG train 6 of the Qatargas 3 project was expected to be completed in 2009, and of the 7.8-Mt/yr-capacity LNG train 7 of the Qatargas 4 project, in 2010 (Forbes, 2007; RasGas Co. Ltd., 2007).

## References Cited

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TABLE 1  
QATAR: ESTIMATED PRODUCTION OF MINERAL COMMODITIES<sup>1,2</sup>

(Metric tons unless otherwise specified)

Commodity <sup>3</sup>	2002	2003	2004	2005	2006
Cement, hydraulic	1,340,000	1,400,000	1,400,000	1,400,000	1,400,000
Gas, natural:					
Gross million cubic meters	39,000	40,000	50,000	59,000 <sup>r</sup>	63,000
Dry do.	29,300	31,400	39,200	45,800 <sup>r</sup>	49,500
Helium	--	--	--	500,000	2,500,000
Iron and steel:					
Direct-reduced iron	750,000	780,000	830,359 <sup>r,4</sup>	815,382 <sup>r,4</sup>	876,885 <sup>4</sup>
Steel, crude	1,027,000 <sup>4</sup>	1,054,000 <sup>4</sup>	1,089,000 <sup>4</sup>	1,057,000 <sup>4</sup>	1,039,138 <sup>4</sup>
Semimanufactures:					
Billet	275,000	300,000	300,000	200,000 <sup>r</sup>	300,000
Bars	741,000 <sup>4</sup>	747,000 <sup>4</sup>	782,000 <sup>4</sup>	791,000 <sup>r,4</sup>	729,916 <sup>4</sup>
Natural gas liquids thousand 42-gallon barrels	27,000	60,000	75,000	100,000	100,000
Nitrogen:					
N content of ammonia	1,166,100 <sup>4</sup>	1,185,300 <sup>4</sup>	1,428,000 <sup>4</sup>	1,753,984 <sup>r,4</sup>	1,800,000
N content of urea	798,700 <sup>4</sup>	800,000	1,040,000 <sup>4</sup>	1,388,121 <sup>r,4</sup>	1,350,000
Petroleum:					
Crude thousand 42-gallon barrels	230,000	260,000 <sup>r</sup>	270,000 <sup>r</sup>	280,000 <sup>r</sup>	290,000
Refinery products:					
Gasoline do.	4,020	14,900	15,000	16,500 <sup>r</sup>	16,500
Kerosene do.	2,450	7,370	7,500 <sup>r</sup>	8,000 <sup>r</sup>	8,000
Distillate fuel oil do.	4,340	7,370	7,500 <sup>r</sup>	8,000 <sup>r</sup>	8,000
Residual fuel oil do.	2,850	2,880	2,800	2,400 <sup>r</sup>	2,400
Other do.	2,100	70,000 <sup>r</sup>	70,000 <sup>r</sup>	80,000 <sup>r</sup>	80,000
Total do.	15,800	103,000 <sup>r</sup>	103,000 <sup>r</sup>	115,000 <sup>r</sup>	115,000
Stone, limestone	900,000	950,000	1,000,000	1,000,000	1,100,000
Sulfur	250,000	300,000	360,000	360,000	250,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Estimated data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Table includes data available through August 31, 2007.

<sup>3</sup>In addition to the commodities listed, clays, dolomite, gypsum, lime, sand and gravel, shale for construction purposes, and methanol are produced, but available information is inadequate to make estimates of output.

<sup>4</sup>Reported figure.

TABLE 2  
QATAR: STRUCTURE OF THE MINERAL INDUSTRY IN 2006

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
<b>Cement:</b>				
Portland		Qatar National Cement Co. (Government, 43%)	Kilns and mills at Umm Bab	1,400
Do.		Al-Jabor Cement Industries Co.	Clinker grinding mill at Mesaieed	165
White		Qatari Saudi Company for Industrial Transformation	do.	165
Helium		Joint venture of Qatar Liquefied Gas Co. Ltd., Ras Laffan Liquefied Natural Gas Co. Ltd., and Ras Laffan Liquefied Natural Gas Co. Ltd. (II)	Ras Laffan	2,800
<b>Iron and steel:</b>				
Iron, direct reduction		Qatar Steel Co. Q.S.C. (Industries Qatar Q.S.C., 100%)	Mesaieed	830 <sup>1</sup>
Steel, crude		do.	Plant at Mesaieed	1,200
Steel, rolled		do.	Rolling mill at Mesaieed	740
Lime		Qatar National Cement Co. (Government, 43%)	Kilns at Umm Bab	28
Methanol		Qatar Fuel Additives Co. Ltd. Q.S.C. (Industries Qatar Q.S.C., 50%; OPIC Netherlands Antilles N.V., 20%; Lee Chang Yung Chemical Industry Corp., 15%; International Octane Ltd., 15%)	Mesaieed	825
<b>Natural gas:</b>				
Extracted	billion cubic meters	Qatar Liquefied Gas Co. Ltd. (Qatar Petroleum, 65%; Total S.A., 20%; ExxonMobil Qatargas Inc., 10%; Mitsui & Co., Ltd., 2.5%; Marubeni Corp., 2.5%)	North Field, offshore	20
Do.	do.	Ras Laffan Liquefied Natural Gas Co. Ltd. (I) (Qatar Petroleum, 63%; ExxonMobil Rasgas, Inc., 25%; Korea Gas Corp., 5%; Itochu Corp., 4%; LNG Japan Corp., 3%)	do.	11
Do.	do.	Qatar Petroleum (Government, 100%)	do.	1
Liquefied		Qatar Liquefied Gas Co. Ltd. (Qatar Petroleum, 65%; Total S.A., 10%; ExxonMobil Qatargas Inc., 10%; Mitsui & Co., Ltd., 7.5%; Marubeni Corp., 7.5%)	Three trains at Ras Laffan	10,200
Do.		Ras Laffan Liquefied Natural Gas Co. Ltd. (I) (Qatar Petroleum, 63%; ExxonMobil Rasgas, Inc., 25%; Korea Gas Corp., 5%; Itochu Corp., 4%; LNG Japan Corp., 3%)	Two trains at Ras Laffan	6,600
Do.		Ras Laffan Liquefied Natural Gas Co. Ltd. (II) (Qatar Petroleum, 70%, and ExxonMobil Rasgas, Inc., 30%)	Three trains at Ras Laffan	14,300
<b>Nitrogen:</b>				
Ammonia		Qatar Fertilizer Co. S.A.Q. (Industries Qatar Q.S.C., 75%; Yara Nederland BV, 15%; Fertilizer Holdings AS, 10%)	QAFCO 1, Mesaieed	420
Do.		do.	QAFCO 2, Mesaieed	440
Do.		do.	QAFCO 3, Mesaieed	650
Do.		do.	QAFCO 4, Mesaieed	740
Urea		do.	QAFCO 1, Mesaieed	470
Do.		do.	QAFCO 2, Mesaieed	530
Do.		do.	QAFCO 3, Mesaieed	890
Do.		do.	QAFCO 4, Mesaieed	1,300
<b>Petroleum:</b>				
Crude	thousand 42 -gallon barrels	Qatar Petroleum (Government, 100%)	Dukhan Field, onshore	100,000
Do.	do.	Maersk Oil Qatar A.S., operator <sup>2</sup>	Al Shaheen Field, offshore	90,000
Do.	do.	Occidental Petroleum of Qatar Ltd. , operator <sup>2</sup>	Idd Al Sharqi, North Dome and South Dome	39,000
Do.	do.	Qatar Petroleum (Government, 100%)	Bul Hanine Field, offshore	21,000
Do.	do.	Total S.A., operator <sup>2</sup>	Al Khaleej, offshore	15,000
Do.	do.	do.	Maydan Mahzam Field, offshore	13,000
Do.	do.	Bunduq Co., Ltd. (BP Exploration, 33.3%; Total S.A., 33.3%; United Petroleum Development Co., 33.3%), operator <sup>2</sup>	El Bunduq <sup>3</sup>	5,300

See footnotes at end of table.

TABLE 2--Continued  
 QATAR: STRUCTURE OF THE MINERAL INDUSTRY IN 2006

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum--continued:				
Crude	thousand 42 -gallon barrels	Anadarko Petroleum Corp., 92.5%, operator <sup>2</sup>	Al Rayyan, offshore	5,000
Do.	do.	Qatar Petroleum Development Co (Cosmo Oil Co., Nissho Iwai Corp., United Petroleum Development Co.), operator <sup>2</sup>	Al Karkara and A Structure	2,000
Refined	do.	Qatar Petroleum (Government, 100%)	Mesaieed	115,000
Sulfur		Ras Laffan Liquefied Natural Gas Co. Ltd.	Ras Laffan	110
Do.		Qatar Petroleum (Government, 100%)	Mesaieed	95
Do.		Qatar Petrochemical Co. Ltd.	Umm Said	70
Do.		Qatar Liquefied Gas Co. Ltd.	Ras Laffan	66

<sup>1</sup>Design capacity is 400,000 metric tons per year; actual production is significantly higher.

<sup>2</sup>Operated under a development and production-sharing agreement with Qatar Petroleum.

<sup>3</sup>El Bunduq Field is located on the border between Qatar and the United Arab Emirates. Royalties are shared by the Governments.